Turbine Topics

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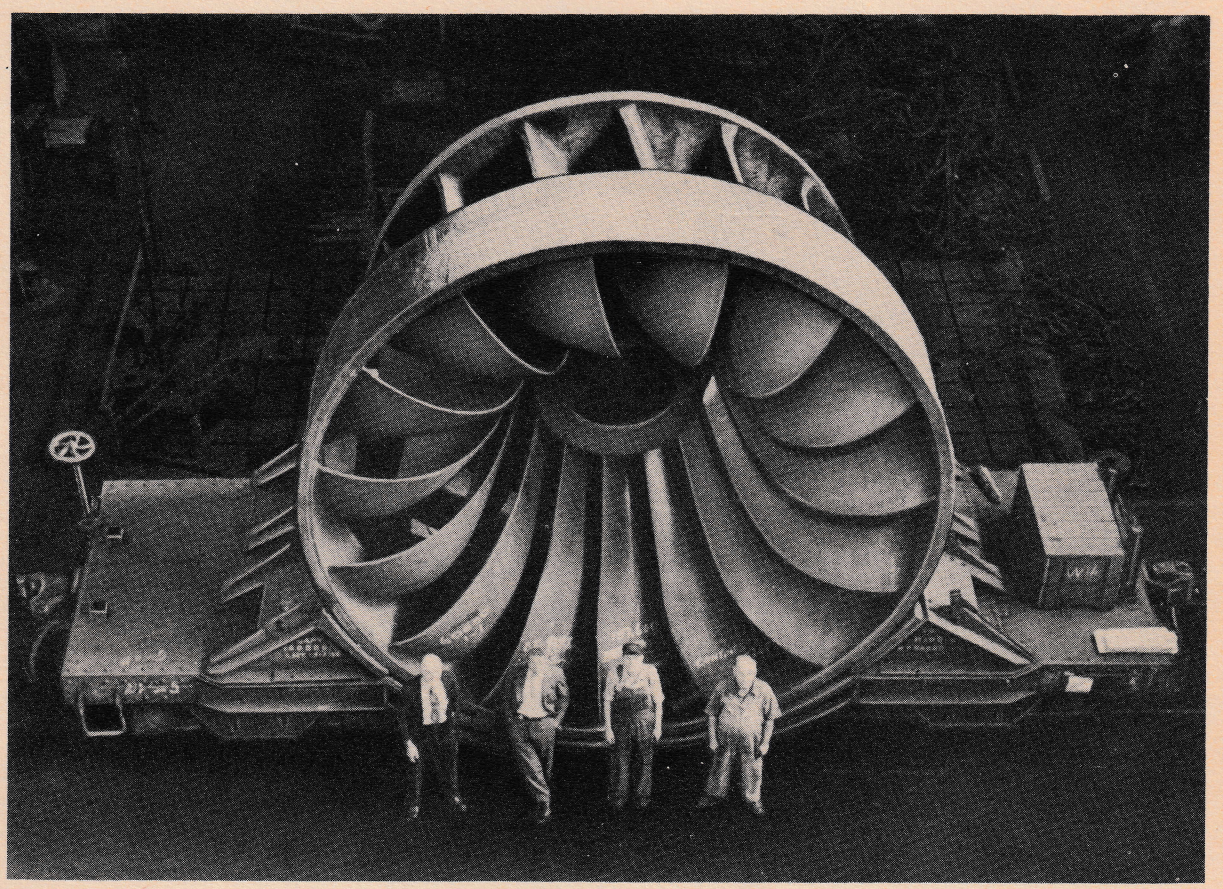


World's Largest One Piece Runner Casting
U. S. Engineers—Dennison Runner—158.5" Type J
Weight, 157,600 Lbs.—Diameter, 16' 3"

BUILDING A WELDED RUNNER

Grant H. Voaden, Engineering Department

This is a picture story of the construction of a welded plate steel bucket runner. The story is restricted to cover only the shop work; all the "paper work" is omitted. It is fully recognized however that every department in both the Main Office and the Shop Office had some part in building this runner. Particularly worthy of mention is the work of the Sales Department in preparing and presenting our tender on the turbine, of the Engineering Department for the hydraulic and mechanical design and that of the Production Department in planning the shop procedure.

Welded runners are a relatively new product with this company and with other companies as well, our first being made in 1929 and this particular runner being about the fiftieth. Usually runners are cast in one piece of iron, steel or bronze, although sometimes for low heads the buckets are of steel plate cast integrally with an iron crown and band. The welded type of runner has several advantages over the cast type, viz., a satisfactorily smooth bucket surface is guaranteed with practically no chipping and grinding; the crown and band, being separate castings, can be machined and placed with proper relation to each other thus assuring smoothness of surfaces and contours exactly in proportion to the model tested in our Laboratory; freedom from sub-surface defects often present in castings; the material is more ductile than a casting and has greater life in most cases.

This type of runner like all of our regular products is not an article that is turned out on a quantity production basis like automobiles or tanks, not because it couldn't be but because the quantity required is very limited. Every runner, and particularly every welded runner, is a custom designed and custom built job at the S. Morgan Smith Company.

Fig. 1 shows the pattern under construction for the face of the bucket of a solid cast runner of smaller size. The patterns for the formers for our welded runner are made similarly. Notice the layers of wood; the thickness of each board or layer (sometimes made up of two boards) corresponds to the distance between the "board sections" on the drawing furnished the pattern maker by the Engineering Dept. This drawing is just like a contour map. The "boards" are cut out to the exact shape of the sections on the drawing and glued together. Then with an air chisel the "steps" are removed down to the bottoms of the notches as indicated by the black line on the picture and the wood worked down to a smooth surface of the shape required for the bucket.

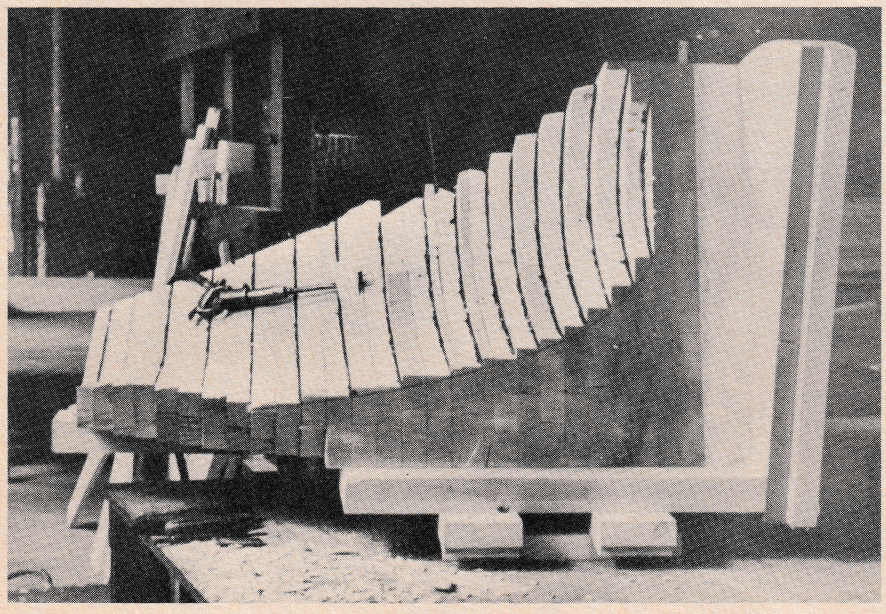


FIGURE 1

The pattern for the cast steel crown of the runner is made in the form of two coreboxes, one for the bottom side and one for the top side. Each corebox is a pie shaped segment and 12 top cores and 12 bottom cores are required for the complete circle. These cores are set up in accordance with standard foundry practice so that in the mould there is a space for the metal between the upper and lower ring of cores. There is also a center core for the hole through the hub. The band casting is also of steel and the pattern consists of inside and outside coreboxes in segments.

The crown and band castings for this particular runner were made at Vulcan Iron Works, Wilkes-Barre, Penna., and were annealed before shipment to us. After being received here in our plant the separate castings were inspected and laid out for machining. The band was then rough faced top and bottom and rough turned on the outside with allowances for finish turning after the buckets were welded in. The in-

side of the band was finish bored to a template made from the full size drawing. The crown was also laid out and machined; finish machined to a template on the conical under surface to which the buckets were to be welded and rough machined elsewhere with allowance for a finish cut when the welding was completed.

Fig. 2 shows the actual wooden patterns for the bucket formers. The wood in these patterns is a good grade California White Sugar Pine practically free from knots, purchased in carload lots of about 25,000 board ft. and of a variety of thicknesses 1", 1¼", 1½" and 2", unfinished. Sometimes Northern White Pine from Michigan or Wisconsin is used. The pattern on the right is for the "bottom former" and the "face" or "front side" of the bucket will be formed against it while the pattern on the left is for the "top former" and corresponds to the "back side" of the bucket. Iron castings were made from these patterns at the Grantley Foundry of the York Corporation. As soon as the castings reached our plant they were checked by our Inspection Department for shape, size and soundness. Then they were laid out for planing and drilling in Department B. The flat surfaces top and bottom were faced off parallel to one another and drilled and tapped where the formers bolt to corresponding flanges on the press in the plate shop. The lugs projecting from the body of the formers were drilled for guide pins which help keep the top former from twisting during the pressing operation.

Meanwhile a lot of preparatory work went on in regard to the plate steel buckets themselves. From previous experience the size of the plates in the flat was calculated and the thickness was directly proportioned from the laboratory test model to the nearest sixteenth of an inch. From these data the plates were ordered for the job. On welded runners an inch or so extra length of plate is provided along the band for burning off to the correct shape later. It is economically advantageous whenever possible to buy large plates so that several buckets can be cut from each plate but on large runners these sometimes cannot be obtained. On this particular runner 15 separate plates were ordered, one for each bucket 80" x 40" x 15/16". The material is flange quality steel boiler plate ASTM Designation A70-39 and was obtained from Carnegie-Illinois Steel Corporation.

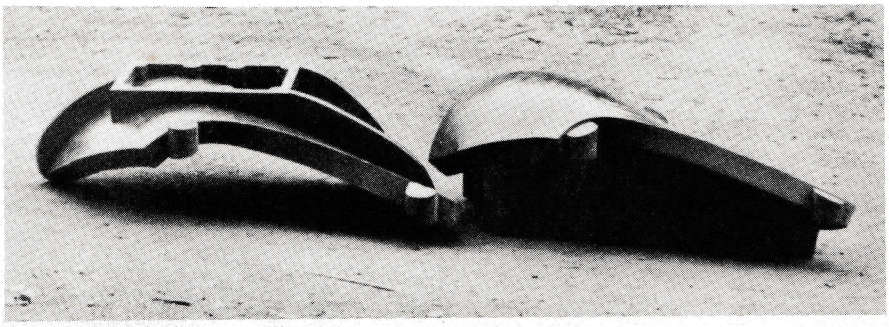


FIGURE 2.

Fig. 3 shows a tin template for the buckets in the flat. A template like this is made by the Plate Shop for each new runner development and is preserved for use later on duplicate orders. The layout man in this picture evidently had his mind so intently upon what he was doing that the vision of the finished runner surrounds him. (This is neither an X-ray photo nor Spiritualism—just double exposure.)

As soon as the cast iron formers were received in the Plate Shop a

FIGURE 3.

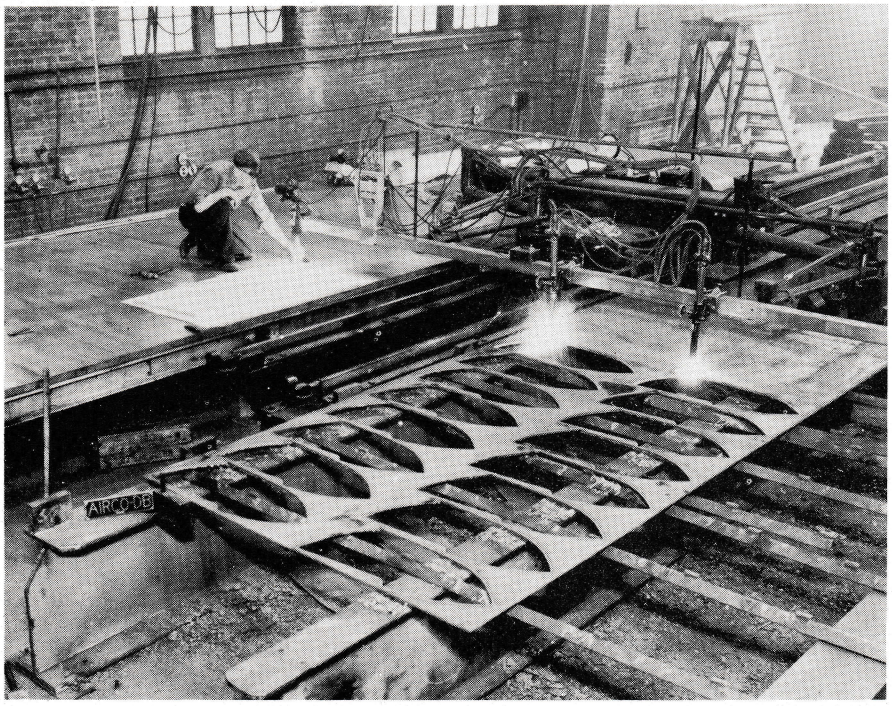


FIGURE 4

large sheet of gasket paper was laid over the bottom former and the top former was let down on top of it, squeezing the paper to the shape of the formers. Then a pencil line was drawn on the paper around the former and the excess paper cut off. In doing this certain allowances are usually made from experience by the plate men for the fact that the bucket itself has considerable thickness whereas the paper has very little. One plate steel bucket was then laid out from the paper template and cut. Certain chipping and grinding which will be described later was done. The iron formers were attached to the press and this one bucket heated and pressed. It was then checked with the former and any necessary corrections for size in the flat were made to the paper template. Having the correct paper template, a permanent tin template was then made and the paper discarded. Next all the remaining buckets were laid out to the tin template.

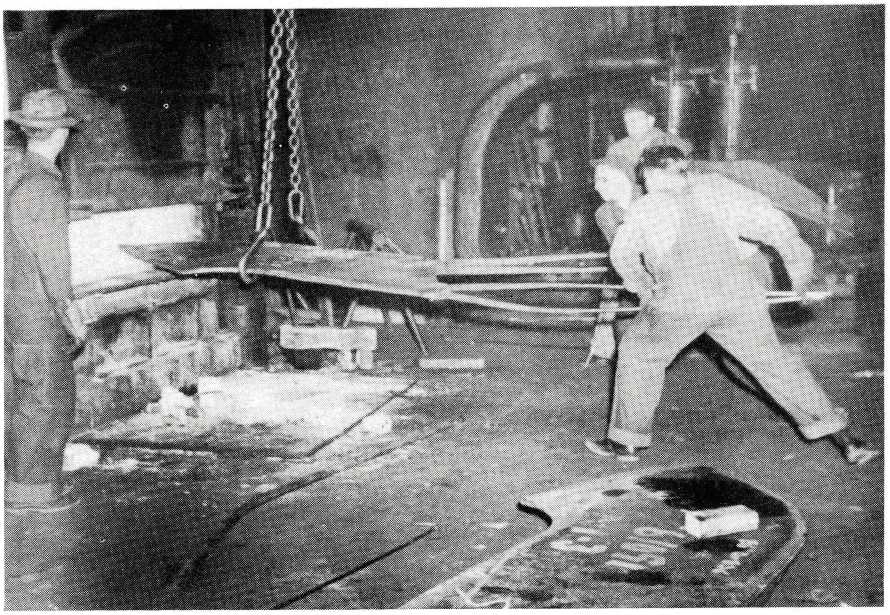


FIGURE 5—April 20, 1943.

The remaining 14 buckets having been laid out the plates were cut out on the Travagraph which is shown in Fig. 4. The buckets for this particular runner were too large for more than one to a plate, however the picture shown here with two gas torches cutting two buckets at the same time is somewhat more interesting. The operator moves his pilot along the outline of the bucket made from the tin template previously mentioned and the two torches follow right along and burn out the plate to the same shape. The edges are always cut at right angles to the plate.

The next job was to chip and grind the edges of the plate to the required form. The entrance edge is rounded to a semicircle to present a smooth contour to the water and the discharge edge is tapered to about half thickness by chipping the back side of the buckets. All of this chipping is smoothed up by rough grinding; finish grinding is left till later.

The next three pictures, Fig. 5 to 7, show the most spectacular phase of the work—the actual forming of the buckets themselves. First the buckets are heated to a deep orange heat (about 2000°F.) in the oven. The heat for this oven is supplied by oil, 2 burners on each side. The oven door is 6 ft. wide with a 3 ft. rise and is operated by air pressure. Fig. 5 shows the plate being heaved into the ovens. It could be pushed in on rollers but they heat up, get flat and are usually in the way. Probably the men get a kick out of heaving the plate in.

When the plate is the right temperature (and the old timers can tell

just by looking at it), it is brought out of the oven and put into the hydraulic press between the formers as shown in Fig. 6. If the runner is so large that the full flat plate won't go all the way across as was the case here, the edge is crimped a little at a time till the whole plate can be inserted. Four or five short strokes of the press were required before the top former could be brought down fully against the plate. During this process the men keep the plate in correct position by means of crowbars.

The press used for this job is of 250 tons capacity operated by water under 1300 lbs. pressure. Notice in Fig. 7 the extension of the bucket beyond the formers to the right. This is due to expansion during heating and the extension is taken on the flatter end of the bucket because, if after the bucket cools and contracts it is too long from this end down to the break in the curvature, it can be corrected easily but if it is too short on this end it is very difficult to make the correction. When the plate is removed from the press it is laid upright on its discharge edge on a sand bed for cooling. In this position the weight of the bucket is acting in such a way as to change the curvature the least.

In Fig. 8 the cold buckets are being given a final check with the former before being " set up." This is really the second time they have been checked. The first time, a rough check was made after the buckets and the formers had cooled, but while the formers were still on the press. There are bound to be some errors in shape for various reasons, for example, handling while hot after bending and from contraction on cooling. To rectify these errors each cold bucket was put back on the cold former, the press brought down and a check made to locate and correct any clearance between the buckets and the former. In the final check shown in Fig. 8 some minor humps along the edges are being straightened out by hand. Sometimes also the plate overhangs the former a trifle here and there for various reasons and this is marked and later ground off as shown in Fig. 9. Every effort is made to assure conformity of the plates to the former as closely as possible.

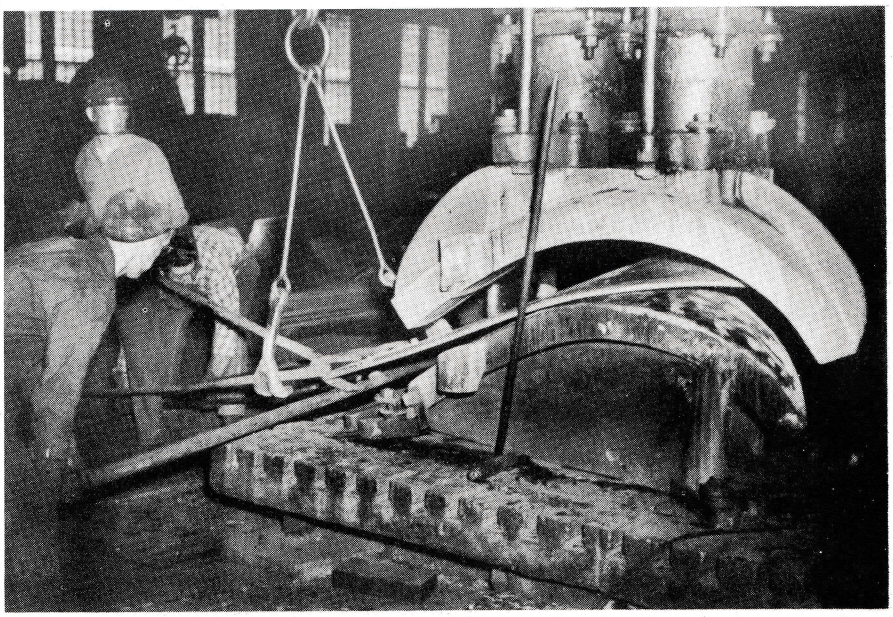


FIGURE 6—April 20, 1943.

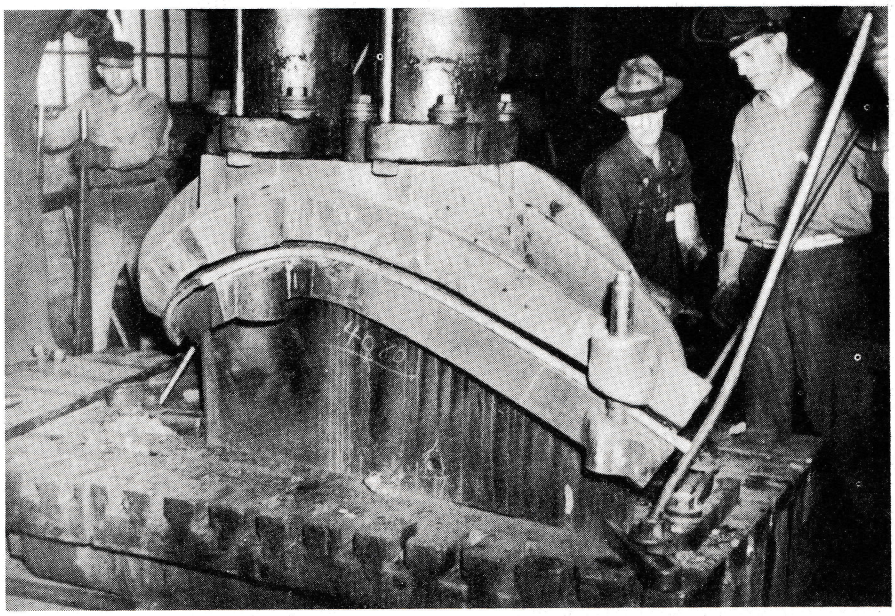


FIGURE 7—April 20, 1943.

All parts of the runner are now transferred to the Welding Department for the "setting up" of the runner, i.e., the assembly of the buckets with the crown and band preparatory to welding. The first step of this process is to burn off, on the back side at a 45° angle, the edge of the bucket which is to be welded to the crown. Fig. 10 tells the next part of the story: Notice the V notched holding blocks temporarily welded to the crown, the plate steel "star" in the center of the hub slotted to hold the discharge edge of the buckets at the proper position and angle and

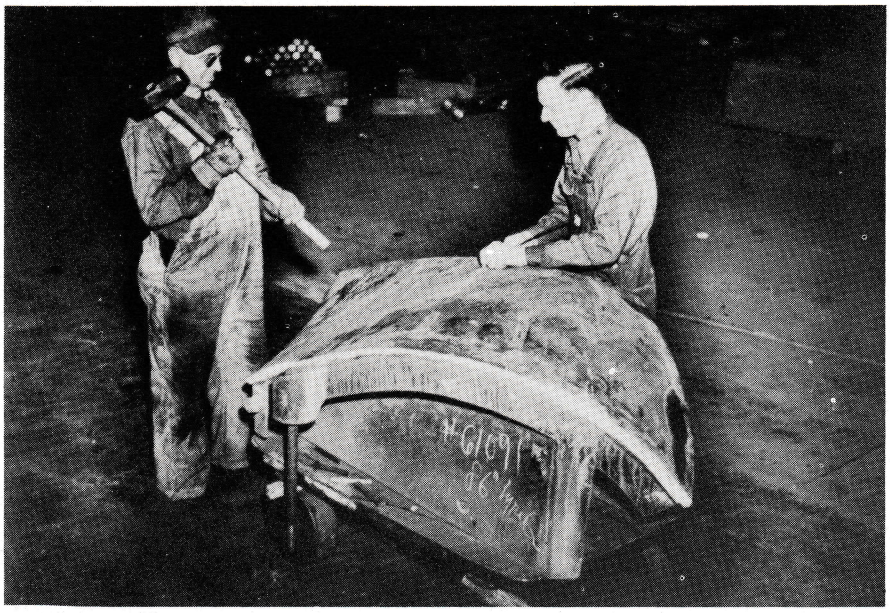


FIGURE 8—April 28, 1943.

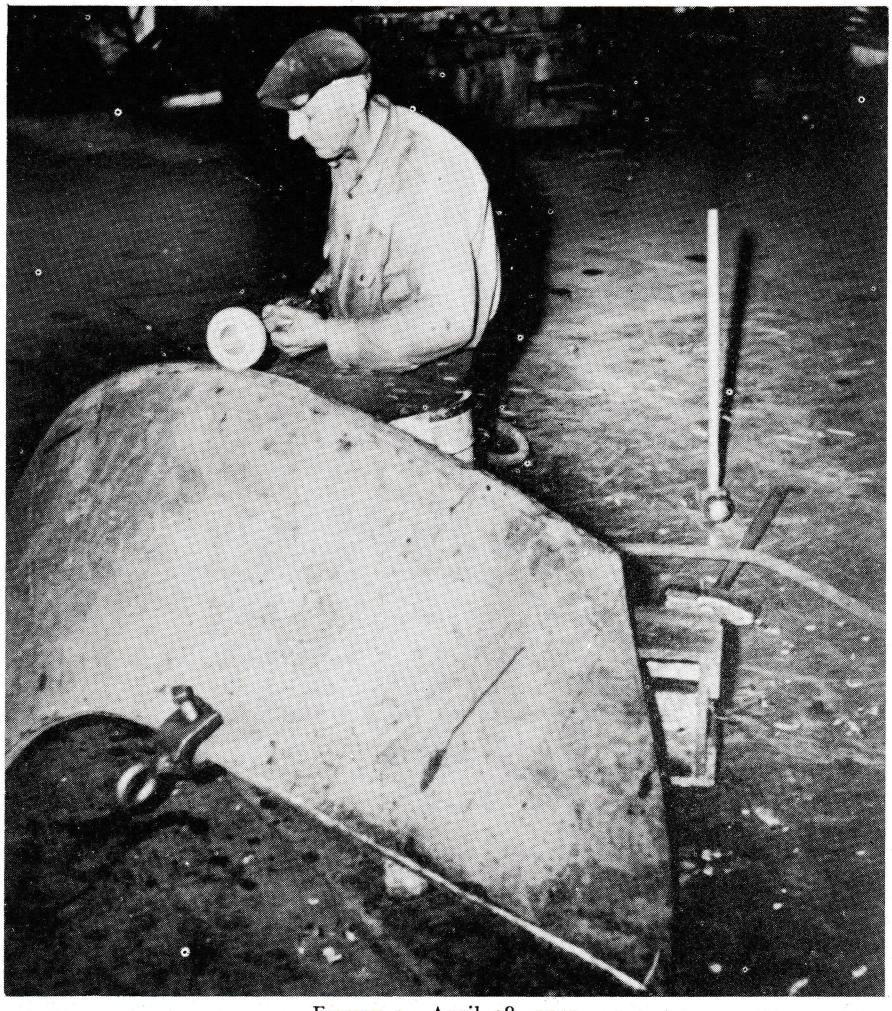


FIGURE 9—April 28, 1943.

the wooden blocking to temporarily support the individual buckets in their correct positions. Whatever further chipping and grinding is necessary to achieve a perfect fit of the bucket to the crown is done at this time.

When the buckets are all in place on the crown and before any welding is done the spacing of the buckets is very carefully checked. The distance between each pair of buckets is measured at about a dozen locations along the discharge edge of the buckets. At corresponding points these measurements must be the same for each adjacent pair of buckets within very close tolerances for this class of work. Furthermore the average of each set of measurements must be very close to the design for if they were not the vent or total area for the passage of the water would not be correct and the power and efficiency of the turbine would suffer. There is the closest co-operation with the Engineering Department in regard to these matters.

Fig. 11 shows the buckets and crown set up with only one bucket missing. The blocks between the buckets, which to a certain extent determine the openings, are being placed and the spacing evened up prior to putting in the last bucket. Ten days elapsed between pictures 11 and 12. The "setting up" has been completed, the wooden spacer blocks replaced by temporarily welded steel bars, a second set of bars and a complete ring temporarily added to prevent deformation, the buckets partially welded to the crown on the back side, and the buckets laid out at the outer edge for burning off to the exact shape of the band. This layout was made by measuring in from the wooden buck seen to the right in Fig. 12 which is the exact shape of the band.

Fig. 13 shows the burning off of the plate to this layout. A point of interest is that the bevel on the

buckets must be at 45° to the band and not necessarily 45° to the bucket itself. Chipping and grinding of this edge is next in order. During this chipping process the band is usually tried several times and a few buckets re-chipped before it will go on without springing the buckets. Note that due to the taper of the band it can be put on from the crown side only, that is, the band casting is laid on the bed plate, the runner assembly is placed crown down inside of it and when the band is "tried" it is lifted up till it is the correct distance from the crown to suit the gate height.

Figs. 14 and 15 show the runner in various stages of welding the buckets to the band. This is one of the most difficult welding jobs because of the cramped quarters and awkward positions a welder must attain. To a large extent of course the runner is positioned to allow downward welding. The welding rod used was Murex Type FHP, 60,000 lbs. per square inch tensile and 20% elongation, i.e., a fairly ductile material, a product of Metals and Thermite Co., Chicago. Several "passes" of welding are required to build up the required strength of weld, depending upon the plate thickness. After the first few "passes" on the beveled side of the plate the root of the weld is chipped out and rewelded from the opposite side of the plate to make sure that the bucket, the casting and the weld metal are thoroughly fused together with no voids or slag to weaken the joint. From here on it's just weld and chip till the job is done. About 1400 lbs. of weld rod was laid on this particular runner.

As the welding proceeds the various temporary braces shown in Fig. 12 have been removed. Now some new ones are added—about eight supports between crown and band to help the buckets support the band during stress relieving. During the welding process the metal has

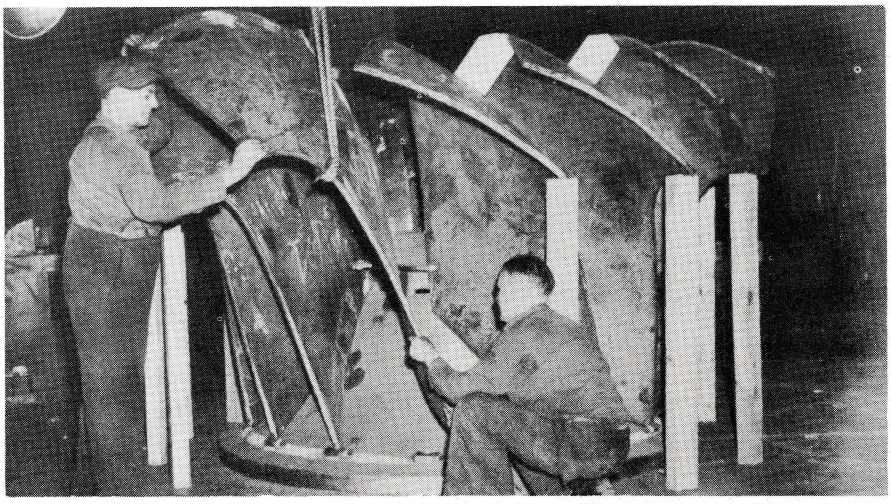


FIGURE 10—May 11, 1943.

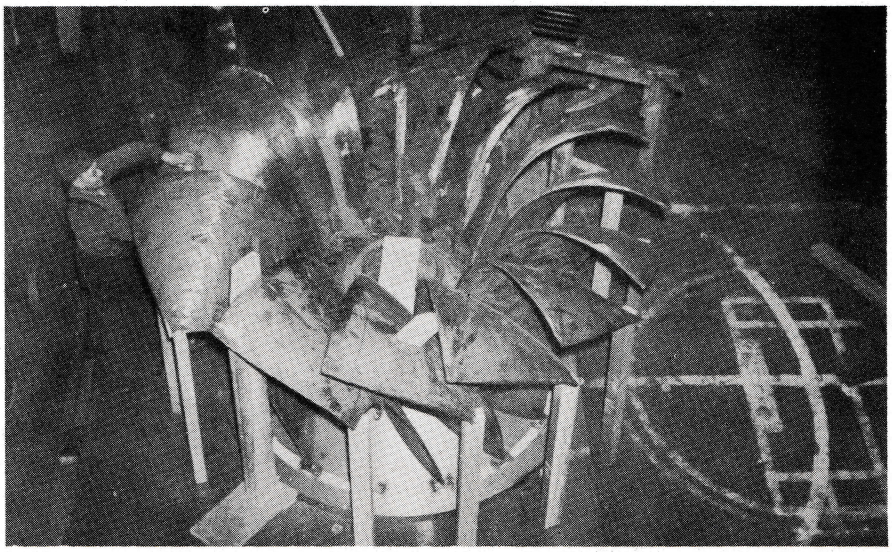


FIGURE 11—May 11, 1943.

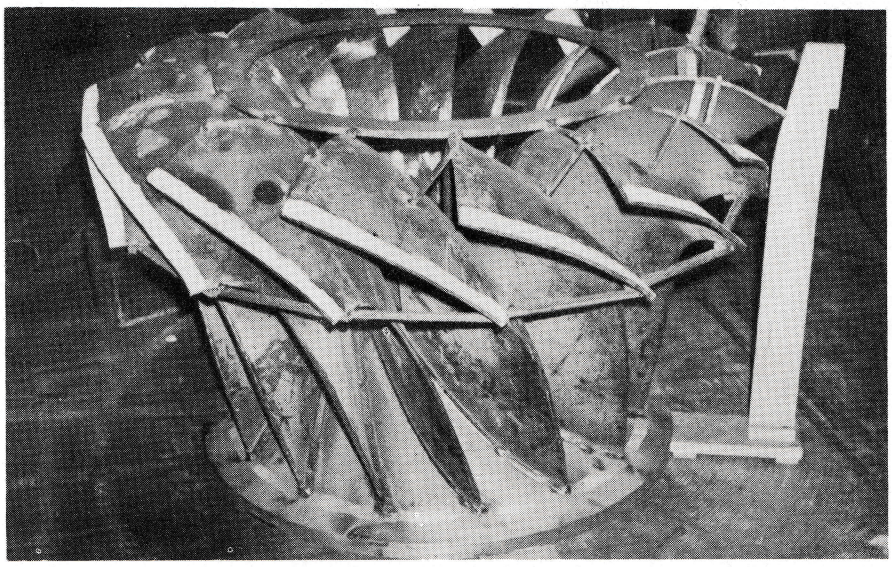


FIGURE 12—May 21, 1943.

FIGURE 13—May 24, 1943.

FIGURE 14—June 4, 1943.

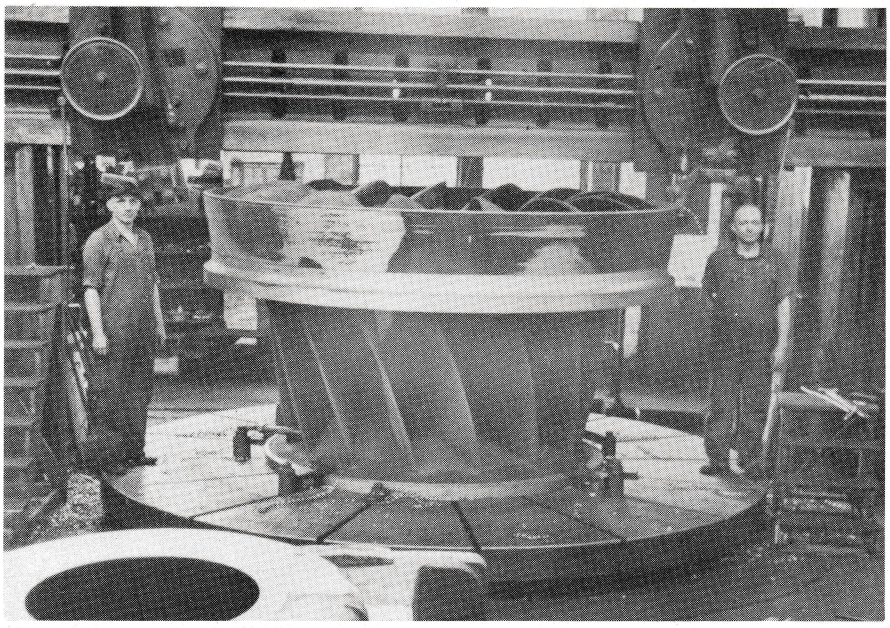


FIGURE 16—July 26, 1943.

been subjected to severe local heating to high temperatures and internal stresses have been set up in various portions of the runner due to uneven contraction when cooling. These stresses are removed to a large extent by heat treatment of the entire welded structure. Not having a large enough oven in our own factory for this particular runner it was sent to Sun Ship Building and Dry Dock Co., Chester, Penna. The stress relieving process consisted of heating the runner in an oven to about 1200°F. at a rate of increase of 150° per hour, soaking at the maximum temperature for about 4 hours and then lowering the temperature at about one third of the rising rate until the temperature is below 300°F.

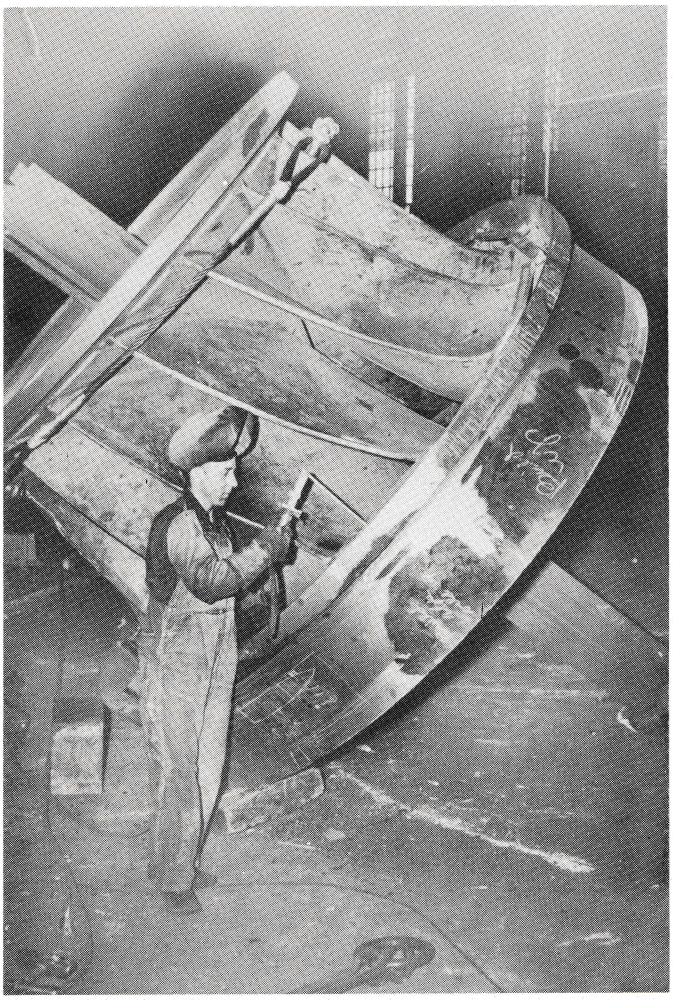


FIGURE 15—June 4, 1943.

FIGURE 18—August 17, 1943.

when it can be removed from the oven. Then after fully cooling the runner was returned to us for finishing.

The rest of the story is pretty much "old stuff" as it applies for all types of runners regardless of material and method of construction. As soon as the runner is returned after stress relieving it is "vented" again. The openings have usually changed very little from the original setup but this is always checked as a matter of record. All runner vent records from the earliest "Success" runner of over 60 years ago are still available and this information is very valuable where repairs and replacements are made. Next the runner is laid out for machining. Fig. 16 shows the runner on

FIGURE 17—August 17, 1943.

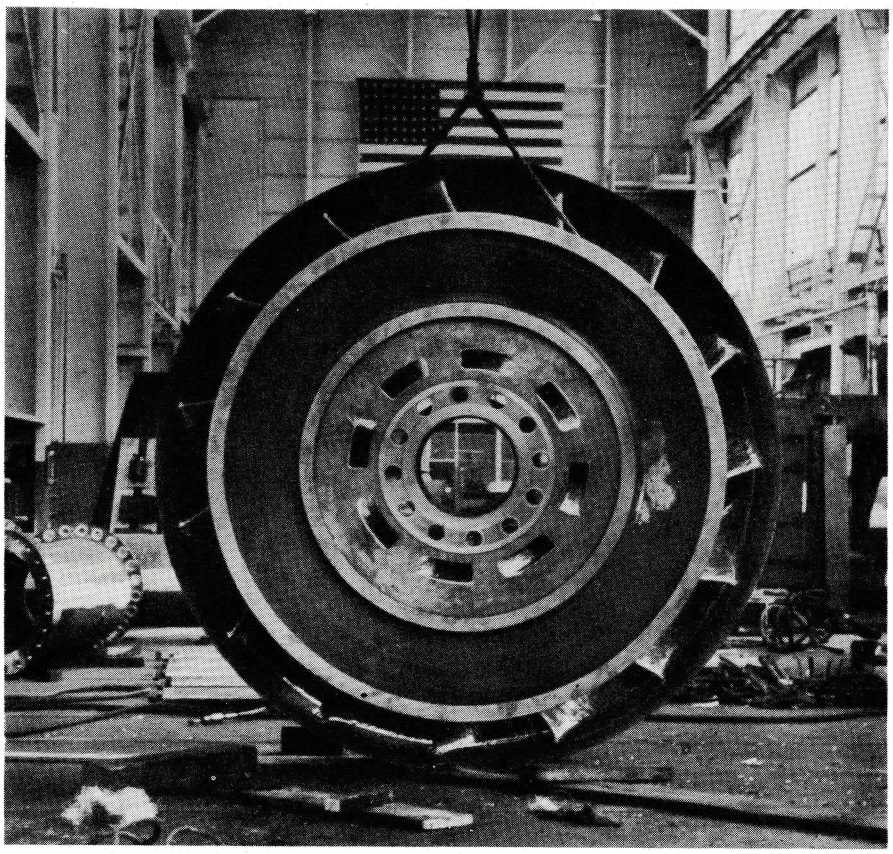


FIGURE 19—August 20, 1943.

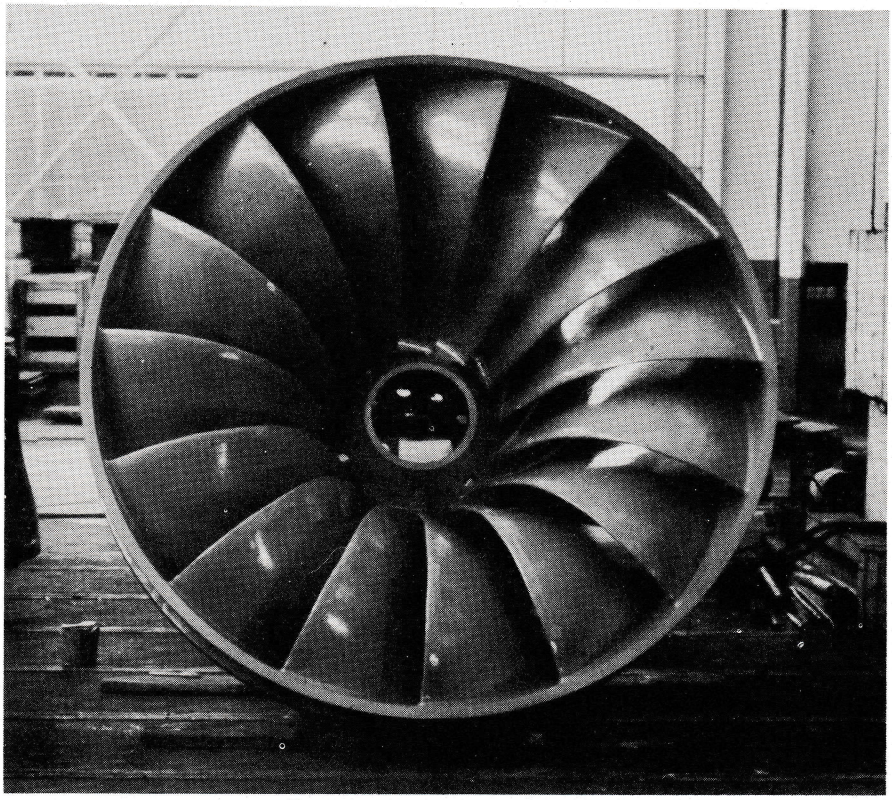


FIGURE 20—August 25, 1943.

the boring mill where the finish cuts were made on the crown and band. Then the runner was taken to Department B where the face of the hub was laid out and drilled for the coupling bolts connecting it to the shaft.

Then followed a complete grinding of the unfinished surfaces of the runner to bring them to final finished form to pass inspection by the Engineering Department. Figs. 17 and 18 show this work in process; in the former the scale and welding splashes are being ground from the bucket surfaces and in the latter the fillets at the band are being rounded up. The semicircular entrance edges and the tapered discharge edges of the buckets are also ground smooth.

In Fig. 19 the finished runner is shown, ready for painting. Notice the eight cored holes in the crown casting. These are for relieving the pressure between the runner and top plate due to leakage through the running clearance between the runner and the stationary parts of the turbine. These holes lead through the runner hub to the draft tube, and may be seen on the discharge side in Fig. 20 which shows the finished and painted runner.

During the finishing of the runner on the erection floor the wheel casing assembly was proceeding close by. Fig. 21 shows the wheel case and runner side by side. Not content with checks by measurement the crew shown tried the runner in its casing and checked and recorded the actual clearances at all points. There can be absolutely no question about the fit when the job is finally erected in the field.

Last but not least comes the eventful day when the entire unit can be packed and loaded on the cars for shipment as shown in Fig. 22. No matter what unavoidable delays have occurred up to this time there can be none now: the loading must be done in less than no time.

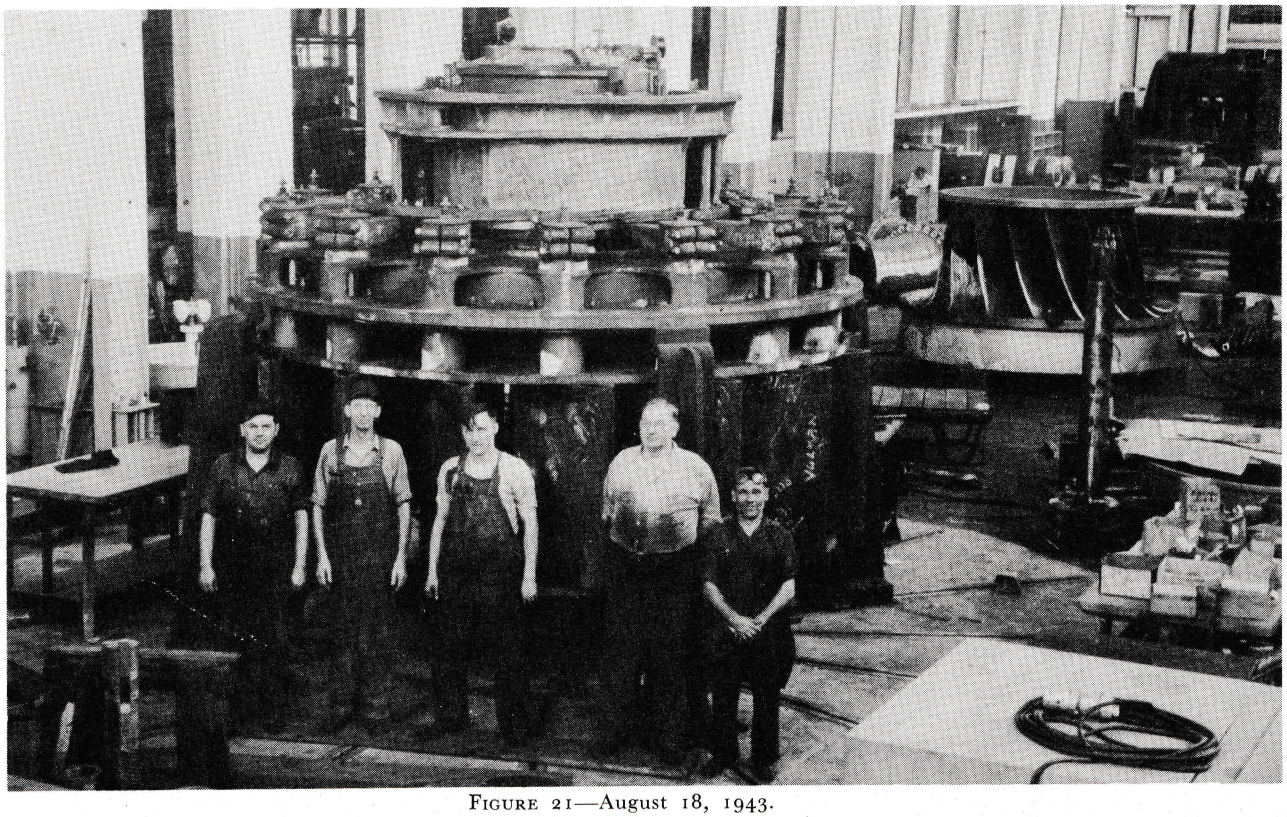
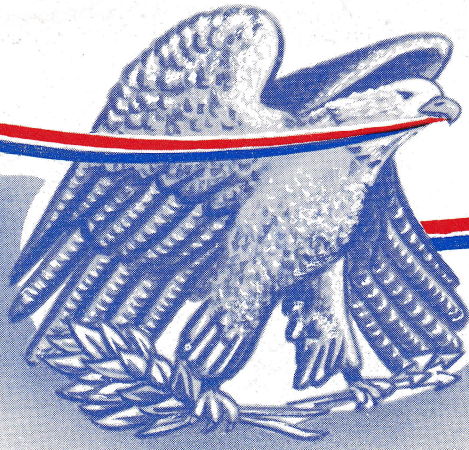


FIGURE 21—August 18, 1943.

FIGURE 22—September 1, 1943.

THE AUTHOR wishes to express his appreciation for the cooperation of the men in the shop as well as the foremen in making the pictures for this article. Special acknowledgement is due Earl Jennings, general foreman of Plate and Weld Shops, and Reuben Reisinger, foreman of the Pattern Shop, for some of the details of the article.



HONOR ROLL

For Employees of S. Morgan Smith Co.

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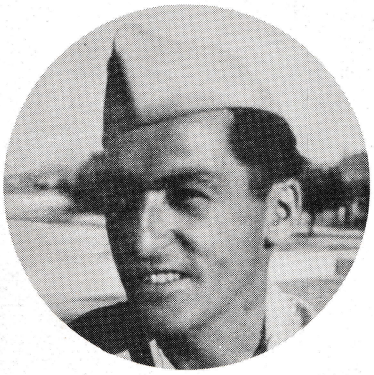
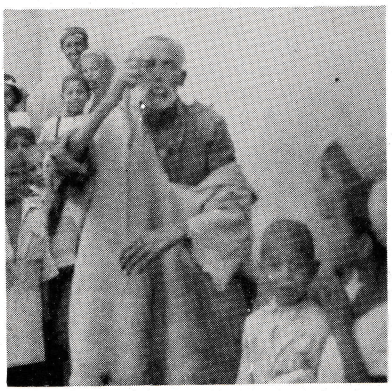
KEEP IN CONTACT—WRITE TO THEM OFTEN

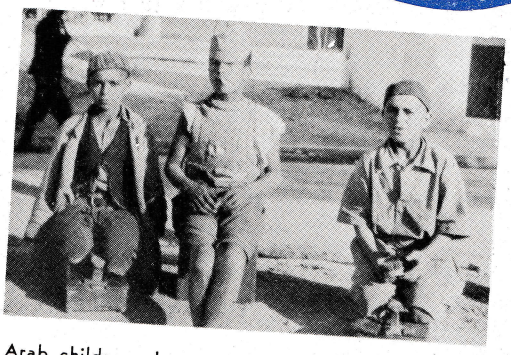
SEE PERSONNEL OFFICE FOR ADDRESSES



Sgt. Ira McHenry and some of his pictures of North African life.



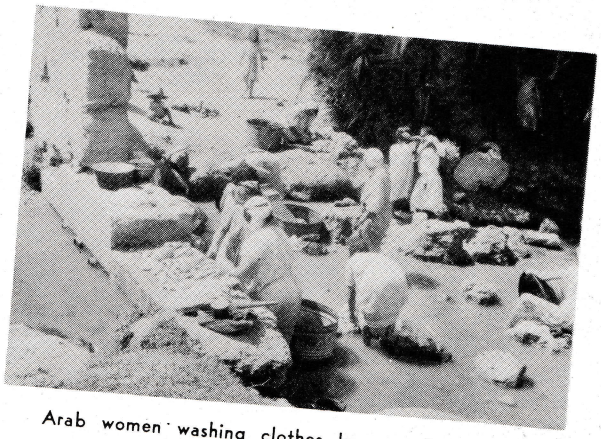
Aged snake-charmer at work.



Arab children who are always on the job to see if American soldiers would like a shoe shine.

Arab and his horse.

North African date palms.

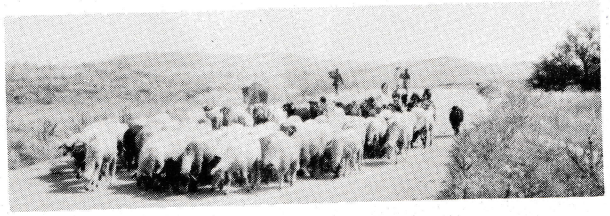


Arab women washing clothes by pounding them on rocks.

Ira and a French friend.

A fine example of Moorish architecture.

Arab women—not the Klu Klux Klan.



Home-coming time for Arab's sheep.

V ◇ ◇ ◇ = MAIL

EDITOR'S NOTE—Sgt. Ira McHenry has been in North Africa for several months and all this time he has been taking pictures of North African life. We are happy to present in this issue some of Ira's pictures (page 13), and in conjunction with them, his letter below about African food. In subsequent issues when there are not enough pictures of our servicemen to fill a complete page, the editors plan to use a feature of this type. So, servicemen, if there are any more camera fiends among you, we're waiting for your pictures.

North Africa.

Several nights ago we had gazelle for supper. It's a species of North African antelope and looks something like a deer except that it has long straight horns. The officers' mess had roast wild boar. This is how it happened. Two of the officers decided to go hunting and they took a jeep and drove about 35 miles back into the mountains. They came back with gazelles, a leopard, a jackal, a wild boar and a hyena. The gazelle was just dandy. The cook did a good job on it. It tasted just like venison. I had a little piece of the boar, and it tasted just like pork, except that the meat was a little darker in color than pork. The officers said they were going out hunting again just as soon as they could get a day off. That certainly suits us just fine, because fresh meat in our particular camp isn't served very often.

Thursday afternoon I had off again. It was a beautiful day, so I rented a bicycle and rode out to the oasis. It must have been wash day for there were a lot of Arab women doing their laundry in the stream that flows from the big spring. They would soak the clothing in the water then lay it on a rock and pound it with a broad paddle. The paddle is made from a branch of the palm tree with the leaves stripped from it.

April 4 I had dinner at the home of a French family. This is how it happened. Just about the time I finish work in the evening and start up the road for camp, a young Frenchman rides past on his bicycle on his way home from work. We have been saying good evening to each other for several weeks. On Monday of last week he stopped to talk to me. He studied English a year and a half while going to school and I understand just a little French now. So we manage to understand each other. His name is Rene Renand. Wednesday evening he asked me to his home to meet his family. His father was a captain in the French army in the last war. His mother is of Spanish ancestry. He has one sister about 14 years old. They invited me to have dinner with them on Sunday night. I had a pass for Sunday afternoon so Rene borrowed the neighbor's bicycle for me and we rode out to the oasis. He also showed me around one of the irrigated farms his grandfather used to own. There were orange and fig tree groves, a big vineyard and many vegetables. Some of the vegetables were unfamiliar to me, but are used for food.

Dinner started with soup. They served only one thing at a time. Then they cleared the table and served a large dish of peas. Then again the table was cleared and we were given clean plates and served a vegetable salad. After that Mrs. Renand brought in a roast chicken. She said something to Rene that I didn't understand. He said that she wanted me to carve and serve the roast chicken. It sort of had me flustered, since it has been a long time since I have carved a roast. Anyhow, I came through with flying colors and managed to keep the chicken all on the plate. Again the plates were cleared away and we were given clean ones. Then she served chocolate pudding, cake and some sort of sweet wine. We were eating from 8 to 9:30. I sure felt stuffed when I left the table.

Rene asked me if I would teach him English if he would help me learn French. I thought it was a swell idea, so several evenings each week we are going to study languages. IRA.

Camp Peary, Va., Sept. 24.

Opportunities for writing are few for Sea Bees at this particular training station, which is the largest and best equipped of the several stations that handle trainees.

It is this short moment I am using to thank the employees of the S. M. S. Co. for their splendid support. It is such funds as the "Victory Fund" that make life just that much easier for the man in the service.

I have had the good fortune of receiving two checks from you to date. They both came at the right hour and carried me across the deep places that are many for a sailor.

It has been said and written many times by our instructors, "The difficult we do immediately and the impossible takes a little longer." These are only words but I have seen it accomplished many times in these short weeks of training.

The Sea Bees are a new and young outfit. They have done a good job and already made a name for themselves. History is being written and established by every battalion that has gone out into the field.

Our basic training is almost finished as far as Camp Peary can take us. From here on out the answers are uncertain for all of us in the 127th.

Thanks again to all my fellow workers.

JEAN YOUNG, CM 3/c

Fort Knox, Ky., Aug. 29.

I waited until I was permanently stationed before writing you. This is one of the largest camps in the country. Has been pretty hot down here the past two weeks with very little rain. This will be my "home" for the next four months. Am getting along fine. Best wishes to the boys at S. M. S.

PVT. EDWIN C. GEIST.

St. Petersburg, Fla., Sept. 6.

Well, boys, I am in a hot place, but it is pretty nice down here. We get up at 5:30 in the morning and go to bed at 10. No leaves for 21 days. Then we get our white uniform. Now we work, drill and drill, etc., sweep the streets around the base—everything has to be clean and bright. Tomorrow we go to sea. They are going to DRILL us again. Bet this will be fun. We jump over the side, and into life boats, and you don't lose any time getting in the life boat because there are some sharks and jelly fish around. The jelly fish burn your skin.

Boys, I am going to tell you something that I did not know before. That is about

V ◇ ◇ ◇ — MAIL

bonds. The uniforms we wear cost about $110. The government pays for that, along with the $50 to $100 a month. But, boy, you pay for a lot of them yourself if you lose them or tear them.

For the first time in Florida, I think it is OK. It was not so hot. The first night I was here it was 95°. We stay in a big hotel. From my room I can look out over the Gulf of Mexico. Swimming is OK here, but there is a big net to keep the sharks and stingers away.

So long and write,
SEAMAN CHESTER REISINGER.

North Africa, August 19.

Today I had a pleasant surprise when I received a V note and "Turbine Topics." Thanks very much for both of them. I can always use the V note as the pays aren't very large. And the paper contains quite a few nights of reading. It sure does bring you close to home. The fellows in my tent never thought there was a piece of equipment like a turbine. They considered it something interesting to work around. And they were more than surprised to read about the Wind Turbine. I am looking forward to some pictures of the Plate and Weld shops in the Topics. Thanks again, and keep up the good work.

ALFRED H. WELTY.

Orlando, Fla., Sept. 3.

Last month I was home for a few days. Shall I say this is the reason why—Mr. and Mrs. Eugene G. Baker now have a baby girl. Born Aug. 19, weighed 5½ pounds. So it's a proud mother and dad we be. Named by her mother—Betsy Ann. P. S. She has her daddy's nose. So that's the low-down.

Now I'll say I saw a good many of you boys when I was in the shop that Saturday, but this goes for each and every one of you, including Albert Gotwalt (Hiya, Gottie). I offer my deepest thanks for the V notes I have received. It makes me feel good to know the boys back home feel this way. I know we all will make better soldiers with real Americans backing us up.

I received my Turbine Topics in today's mail. I enjoy the shop news and pictures to keep up with all the changes. I always read the letters from the other boys in the service. Say, fellows, I saw C. J. Meisenhelter in Silver Springs, Fla., several weeks ago.

My best regards to you all. Keep your chin up—we are.

Sincerely yours,
S/SGT. EUGENE G. BAKER.

Great Lakes, Ill., Sept. 18.

Just a line to let you know I received my $5 and I want to thank everybody concerned. It sure is a help to get that $5 every month.

It is very cold out here around the lake. We wear pea coats every day. The temperature was down to 37 Thursday morning. Well, I can't say I like it out here. I am a little homesick for my wife and all the guys I worked with. We get up at 4:30 most mornings and go to bed at nine bells, sometimes 9:30. Tell all I said hello. ROLAND GROSS.

Jacksonville, Fla., Sept. 20.

Just a few lines to say hello and let you know everything is going OK for me in the Marine Air Corps. I am sorry I don't write more to you but it just can't be helped because my time for writing letters is one of those things that is of the past.

I don't have much news to write about because things just didn't seem to happen here while I was going to school. Although there were plenty of plane crashes, fellows getting killed, etc., but because we were here and saw them happen—well, we just don't think too much about them.

Well, now I am finished school. Came out Pfc. and am ready to ship off this base tomorrow, Sept. 21. I am now ready and have been trained for actual combat. So I'll probably ship out to the west coast. Well, so much for me.

My main reason for writing this letter is to personally thank my employer, the S. Morgan Smith Co., and their employees for their very fine cooperation in raising funds and then sending those funds in a form of V note to each and every one of us fellows in some branch of the service. I personally want to thank the above for what they have done and are still doing for us. I assure you that these V notes are certainly appreciated by all of us fellows. Thanks a lot once again.

Hoping to hear from the fellows.
JOHNNIE DELLINGER.

Camp Chaffee, Ark., Sept. 19.

Perhaps you wondered what happened to me as far as writing goes. I must admit that I have been a flop in letter-writing, but I hope you will excuse me, and I hope to do better.

I received the money order today. I really appreciate it more than I can express. I could have written before, but because of the fact that I was close to home, being at New Cumberland, I thought it wasn't necessary. When I was transferred to Alabama, I knew it was just until I was sent to another outfit. So when I was sent out here to the 16th Armored Division, I thought my feet were planted for awhile and I thought I could think of something to write.

I have my copies of "Turbine Topics" and enjoy it immensely. It is good to read about the happenings at S. M. Smith Co. I wonder why there is so little news about the Design Dept. and Contract Service Dept. They surely must do something that can be printed.

I have only been out here for one month exactly today. The 16th is a newly activated division. I am in the Armored Field Artillery of the division. I don't know anything about artillery, but it doesn't take long for them to take you in hand and proceed. We are to get newly inducted boys here for training, but so far they haven't arrived, and we are just trying to get ourselves into some kind of physical shape and know better our particular line of work.

According to a letter just received from Phil, things are quite busy, and we are quite busy here, so I guess everyone has his share.

I will close now, and want to again thank everyone for the money orders and copies of "Turbine Topics" which are sent to us. I for one really appreciate them, and I know the rest surely do.

Sincerely,
G. B. WECKER.

EMPLOYEE BIOGRAPHIES

GEORGE A. JESSOP

Over forty-two years' service, the last twenty as Chief Engineer of our company, is the enviable record that Mr. Jessop has established for himself. He began his career in our shop in 1901 as a machinist apprentice. In 1909 he was graduated from the University of Michigan as a mechanical engineer. After working in the Design Dept. for a while, he moved to the Engineering Dept. to design and test runners. Upon the death of John Felthousen in 1923, he became Chief Engineer of the company.

In 1934 his work on Smith-Kaplan turbines for Bonneville took him to the Voith Company in Heidenheim, Germany, for consultation. While in Europe, he visited many of its power plants.

Mr. Jessop has always been active in local engineering organizations and is a Past President of the Engineering Society of York, Pa., and also a member of the American Society of Civil Engineers and the American Society of Electrical Engineers.

On May 4 of this year, his sixtieth birthday anniversary, a large number of his local engineering associates and friends attended a testimonial dinner held in his honor.

GEORGE J. SCHLAANSTINE

George was born in East Prospect on April 19, 1873, and attended the grade schools in Lancaster county. From 1889 to 1893 he served his apprenticeship as a machinist with Howard V. Bates General Machine Co. in York.

He was employed as a machinist with the New York Wire Cloth Co. from 1893 to 1895, with Chambers Brothers Co., of Philadelphia, Pa., during 1895, with our company from 1895 to 1898, and with the York Corporation from 1898 to 1900.

Since 1900 he has been continuously employed by our company, first as a machinist, then as the foreman of the large erection department, and finally as a planner and router in the Production Dept.

George has been a regular and faithful worker in this department, and because of his wide knowledge of shop procedures it is only natural that he should find satisfaction in this job, where familiarity with company history is an indispensable asset.

He is the father of a son and a daughter. His daughter is the widow of "Doc" Eader, who was employed by our company until his death in April of this year.

HOWARD M. DEISINGER

When it comes to drawing a name out of the lottery box for use on this page, the Shipping gang seems to be especially lucky. In August it was Edgar Rinehart, of the Shipping gang, whose name was drawn; this month it's Howard M. Deisinger, a carpenter on the same gang.

Howard was born on December 14, 1904, in Dover township. He was farming until he decided to take up the carpenter trade several years ago. For three years he did this kind of work at the Schimmel & Binder Co. in York. Then in 1942 he entered our employ.

Not content with just having carpentry for a job, Howard even likes to work with a saw and hammer in his spare time.

Wimpy is a hunting enthusiast. Not ducks and rabbits—BIG game. He has been hunting in Potter, Perry and other counties. But in hunting he seems to have fisherman's luck. He has never "brought home the bacon." "I like to go just for the fun of it."

His oldest child, a daughter, 17 years old, is working at the York Caramel Co. Wimpy's other four children are still in school.

BOWLING NEWS

The duck pin bowling season is now in full swing. Each Friday night at the Central Bowling alleys sixteen teams composed of members of the various departments are in action.

Any person desiring a free night's entertainment would do well to spend an evening witnessing the anguish, hate and elation which show on the faces of the bowlers, depending, of course, on the "luck" they are having at that particular moment. You might also be surprised and pleased at the antics of the various bowlers when they throw the ball. Then there is always the good old fashioned "ribbing" among the players. All in all, we believe you would have a most enjoyable evening.

It is interesting to note that at the conclusion of the first three weeks of bowling, there is only one bowler averaging over 150, Ernie Stokes, Shop Office, whereas last year there were several bowlers above or near this average. The 500 triples and over are also conspicuous by their absence, there being only one or two so far this year, while in the past seasons there were usually one or two 500 triples every week. Of course, the boys are blaming the pins for their bad scores, but we have our own opinions.

There are still openings on several of the teams for anyone who may care to bowl. If interested, kindly get in touch with any of the following officers: Charles Spence and Charles Firestone, Main Office; or Edward Rohrbaugh, Donald Thompson and Earl Meisenhelter, Shop Office.

D—A RINGER! Right over the peg.

IN AUGUST a few men began pitching horse shoes on the cinders and ground on each side of the new Navy building. Each day there were a few more spectators and other pitchers who became interested in this noon hour recreation. The company then installed three regulation horse shoe pitching courts, and a tournament was organized with ten teams participating. The horse shoes were made many years ago by employees in our old foundry and had been lying in our storeroom ever since.

The above pictures show the opening shots of the tournament on September 27. Picture A is composed of the twelve men who started the tournament that day. Left to right, front row: Chester Baugher, Robert Miller, Joe Gallagher, Don Hartman, Arthur Palmer and Nevin Dietz. Back row: Raymond Hess, Arthur Hartman, Lawrence Vaughn, John Kunkle, Harold Miller and "Whitey" Myers.

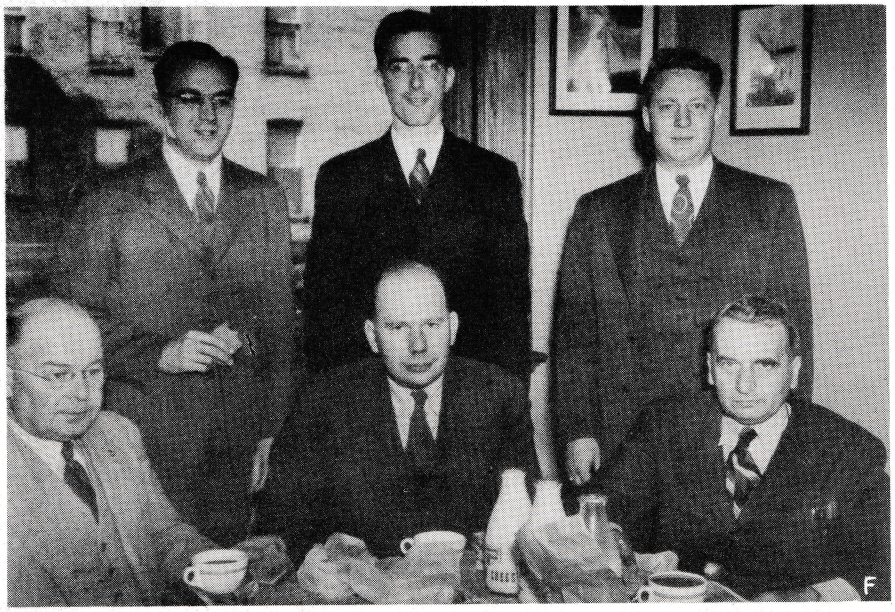
PICTURE B is composed of four of the players in action. Left to right: Joe Gallagher, Chet Baugher, Don Hartman and Art Palmer.

PICTURE C is an action shot of Raymond Hess, left, and "Whitey" Myers about to let one "go."

The other participants in the tournament not in the above pictures who played their first match on September 28 are as follows: Dick Myers, George Dietz, Nevin Ellis, Ed Aldinger, Bob Luzier, Howard (Mountaineer) Bubb, John Fry and Walt Rohrbaugh.

CAMERAMAN . . . . .

E



F

F—On Sunday, October 3, the Wind Turbine engineers shown above took time out from their conference to have a self-served picnic lunch in the conference room in the main office. The pictures above show (E) Dr. Theodore von Karman, director, Guggenheim Aeronautics Laboratory, California Institute of Technology, who is the Consulting Engineer on the aerodynamic problems of the project, and (F) back row: Ted Zowski, Design Dept.; Myle (Chris) Holley, Jr., and Carl Wilcox, Rutland, Vt., office; bottom row: George Jessop, our Chief Engineer; Dr. John B. Wilbur, professor of Civil Engineering, M. I. T., and chief engineer of the Wind Turbine project; and Dr. von Karman.

G

G—The "Pinocle Sharks" enjoying the game at noontime under the protection of a half of a speed ring. (Is it bomb-proof?)

H

H—Ed Rohrbaugh in the raw (?) His vocation is expediting (pushing), and the snapshot indicates that he also knows how to expedite the lawn mower.

I

I—Jim Scoville reports that the "Mighty Herbert Phillips," erector, has increased his strength as a result of a visit he made to the Barbary Coast of San Francisco. Jim also had his picture taken in this pose. "Try to get the picture."

UP and DOWN the AISLE

Congratulations to Betty Louise Zech, daughter of Mr. and Mrs. Charles Zech, 707 Roosevelt avenue, and Lt. Raymond L. S. Davis, son of Mr. and Mrs. Bernard Davis, 866 E. Poplar Street, who were married on September 25, at 7:30 P. M. The candlelight double ring ceremony was performed in the Messiah Lutheran church by the Rev. M. A. Janson.

The bride was given in marriage by her father. For her maid of honor she had chosen Emily Meldrum. Lt. Davis' best man was William Janson, and the ushers were Edward Little and Jack Reichley.

A reception at the bride's home followed the ceremony. Lt. and Mrs. Davis will reside at Camp Pendleton, Va., where the bridegroom is stationed with the U. S. coast artillery.

Lt. Davis was graduated in 1940 from the William Penn Senior High school, and before joining the Army was a draftsman at the York Corporation. Betty was graduated in 1941 from the William Penn Senior High school and had been working here for about a year.

* * *

It is good to see Charlie "Fat" Firestone back on the job again on Floor 3 & 4. Fat suffered an injury to his leg.

Harry C. Strausbaugh, who died suddenly from a heart attack on September 21, at 6:30 A. M., was born in York on November 14, 1866. Harry was employed as a molder at the A. B. Farquhar Co. from 1882 to 1886, and at the foundry of Baugher, Kuntz and Stewart Co. from 1886 to 1890.

On December 28, 1891, Harry was employed as a laborer in the machine shop of our company. When the foundry was built in 1894, he pursued his trade in it as a molder. After three years, he was transferred to the machine shop where he continued to work until the day before his death. His latest job was tool room attendant.

Harry was honored at our recent service pin banquet; he was the employee with the longest service record, 51 years. ("Turbine Topics," Vol. 1, No. 4, pp. 2, 3, 6, 14.)

Raymond "Chick" Strausbaugh, a former employee who died April 1, 1943 ("Turbine Topics," Vol. 1, No. 2, p. 9), was Harry's oldest child. Harry leaves a daughter, Mrs. Caroline Baer, wife of Charles Baer, who works in the Main Office; his son, Pvt. James Strausbaugh, stationed at Norfolk, Va.; his sister, Mrs. Ida Busser; seven grandchildren, and a great-grandchild.

Shortly after viewing the body of his father, Harry C. Strausbaugh, Arthur Strausbaugh collapsed suddenly at Hartley and Market streets and died at 8:14 A. M. on September 21, while being taken to the hospital.

Arthur was born in York on September 14, 1895. He was employed by our company as a coremaker from 1912 to 1918. From 1918 to 1919, he served overseas in France with the A.E.F. While fighting in France he was gassed and shell-shocked.

From 1930 to 1938 Arthur was employed by the Eyster, Weiser Co. as a coremaker, and January 23, 1939, he returned to our company as a crane operator, and continued in this job until his untimely death.

Arthur leaves his widow, Mrs. Grace Strausbaugh; a daughter, Mrs. Charles Miller of Lancaster; a sister, Mrs. Caroline Baer; and a brother, Pvt. James Strausbaugh.

Funeral services for Arthur and his father were held at 2 P. M. on September 24. Members of the Local Lodge 1400, I.A.M., served as pallbearers. They were William Firestone, Richard Trimmer, Arthur Hartman, Willis Tracy, Jacob Helfrich and Edward Shanabrough. Interment was in Greenmount cemetery.

* * *

According to a dispatch from the Washington, D. C., patent office, Earl E. Hilker, Project Engineer, and Eugene C. Brisbane, York, have recently been granted their patent which was applied for in May, 1941. It concerned the exclusive rights to a new means of controlling fluids.

* * *

Do you like to play cards or dance? From 8 to 12 P. M. on November 13 the Athletic Association is going to sponsor a dance and card party in the Alcazar ballroom. The committee appointed to arrange for the event is John Spangler, Floor 1; Paul Grissinger, sergeant of the Guards; Tony Hoffman, Jr., Plate Shop; and Louise Auman, clerk Floor 1, chairman. Members of the association are invited to purchase tickets for themselves and any outside guests they wish to bring with them. The price of the tickets is 55 cents. Music will be furnished by Dick Moul's orchestra.

It has been announced that there are now 231 members in the association. The membership committee must have been on the job.

* * *

Clarence Bixler, Floor 3 & 4, is back on the job again after a bad case of grippe. Hope you have regained your former good health, Clarence.

* * *

We wonder who roamed a few blocks away from the Philadelphia Brass & Bronze foundry in Philadelphia, and was seen entering a taxi, saying, "I'm lost. Take me to the Philadelphia Brass & Bronze plant. I'm the S. Morgan Smith truck driver from York, and don't know where I'm at."

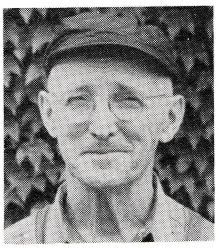
We can't understand how it happened. He was seen talking to Gosnell and Gotwalt with ten road maps in his hand.

* * *

The men of assembly floor 3 & 4 regret having lost Dorcas Jacobs and her yarns about her 200 average in bowling. But we all wish her every success in her new position in the main office.

Dorcas' replacement, Helen Edman, proved herself a very capable campaigner in the Third War Bond drive. Keep up the good work, Helen.

* * *



On October 2 our company lost another faithful "Old - Timer." Henry B. Reisinger died that evening at his home, 724 West Philadelphia street. He was 72 years old. His death was unexpected, although he had been under a physician's care for some time.

Henry, just as Harry Strausbaugh, had been a guest of honor at the service pin party in June. He had been an S. M. S. machinist on erection Floor 1 for 46 years.

Before his employment here on October 1, 1897, Henry had learned the machinist trade at the Quickel & Bro. establishment in York. Since he had been with the company such a large part of its existence, Henry had worked on practically all the larger jobs the company has produced.

Surviving besides his wife, Georgianna Reisinger, is a son, George J. Reisinger, an instructor in the Hershey industrial school, Hershey, Pa.; a step-son, Charles J. Sieck, Baltimore; a brother, Bert Reisinger, 23 South Rockburn street; and two grandchildren.

He was a member of Court York, No. 148, Freemen of America, International Association of Machinists, Crystal Lodge, No. 248, K. of P. and St. Paul's Lutheran church.

Funeral services were held Wednesday, October 6, at 2 P. M. Interment was in Prospect Hill cemetery.

* * *

Congratulations to Mr. and Mrs. Charles Axe, who announced the birth of a son at the York hospital on Sunday, September 5. Charles is a layout man in the Plate Steel Dept.

* * *

We are glad to welcome Benjamin H. Tolan of Barberton, Ohio, into our shop. Mr. Tolan is the resident inspector for the Babcock & Wilcox Co., and is working on our coal pulverizer contract.

* * *

Robert Sheffer, of the Tool room gallery, was inducted into the U. S. Navy on September 28, and left York on October 5 for an unknown destination. On January 15, 1937, Bob began working here, and two years ago completed his apprenticeship course. He is the sixty-seventh S. M. S. man to enter the armed forces. Good luck, sailor!

J. A. Patterson, B, and his wife vacationed in Atlantic City. Pat and his wife celebrated their 25th wedding anniversary while on this vacation. When asked if it seemed to be a long time since they were married, Pat replied "No, it seemed as if it were yesterday." We wish Pat and his wife many more of these celebrations.

* * *

Published below is a letter received from Guy Ludwig, erector. Mr. Ludwig has been an employee of the company since November 2, 1920. He has been the supervisor of numerous jobs in the erection field, and one of his experiences was included in a previous issue of "Turbine Topics" under the title "Adventures of an Erector."

July 21, 1943
Municipal Light &
Power Works
Reykjavik, Iceland.

S. Morgan Smith Co.
York, Pa.

Gentlemen:

Arrived in Reykjavik Monday, July 19. Left Prestwick, Scotland Sunday, July 18. The airport I came to in Iceland is about 40 miles from Reykjavik. Had to stay in U. S. A. Army Camp until Monday for transportation to Reykjavik.

I wanted to find out my address before writing you. It will be care of Municipal Electric Light & Power Works, Reykjavik, Iceland.

Was to the power house today where S. M. S. wheel is going in. They won't be ready to set draft tube for three or four weeks. Power house is 50 miles from Reykjavik. Not going there for two or three weeks. Nothing I can do. Once I go out there must stay.

If any S. M. S. erector ever had as much trouble going any place as I had to get here would like to hear about it.

If you have never traveled Army transports just try it sometime and

UP *and* DOWN *the* AISLE

sit on one of those metal seats for 2,000 miles, and when you are in the middle of the ocean one of the motors starts to miss. If I tell you the feeling I had the Censor will cut it out.

I must say at . . . Deleted by Censor . . . everybody treated me swell.

On Friday night, July 16, I was supposed to leave most any time. First it was 7:30 P. M., then 2:30 A. M. and so on. No sleep that night.

Saturday, July 17, I tried to send Municipal Electric Light & Power Works a cable from Prestwick Airport Hotel. They said I must go to Glasgow, Scotland. This is what I did. I didn't know just when I was going to leave Prestwick for here.

This Iceland weather is about 50 times different from York county. To let you know how cool it was in Reykjavik Monday, July 19, some of the truck drivers had fur-lined coats with parkas over their heads. When the wind blows in Iceland it really blows. They have wind recordings of 161 miles per hour.

I saw plenty of icebergs in Newfoundland. Thought they were big. You should see an Iceland glacier. That really is a pile of snow and ice.

The town of Reykjavik is heated by hot water. They take it out of the ground and it is run through pipes about 10 miles. Where this steam and hot water comes out of the ground the natives have hot houses. They raise tomatoes and a few other vegetables. Tomatoes sell for $1 per pound.

The only things rationed in Iceland are flour, sugar and coffee.

Food is not bad in Reykjavik. Hoping it will be the same on the job. Will get all my expense money from Power Company.

Some day I am going to write about my trip from St. Johns to Reykjavik and keep it until I get home.

You ask how long this job will take at Ljosafoss power house? Will finish there about December sometime, and Laxa powerhouse, I am going there Saturday, July 24, just to look it over. This Laxa powerhouse does not belong to Municipal Electric Light & Power Co. While I am there will find out.

Going to write Mrs. Ludwig and have her pack my small trunk with warm clothing to be shipped with wheel parts.

Yours truly,

GUY LUDWIG.

NOVEMBER BIRTHDAY GREETINGS

2—Mary Fungy, Navy inspector; Paul Heidler, Navy; and Guy Shunk, C.

3—Albert Shaffer, Tool Room foreman; and Paul Smith, Plate shop.

4—Millard Whereley, Weld Shop.

5—Noah Lease, Plate Shop.

6—William Glatfelter, Floor 1; Paul Young, Sales; and Herbert Zimmerman, B.

7—Robert Flohr, B.

8—Howard Bubb, Weld Shop; and Dorothy Berkheimer, Navy, Main Office.

9—John Andrews, Floor 1 inspector; Charles Farscht, Purchasing Agent; Arthur F. Smith, night superintendent; and Harvey Spahr, A.

10—Bernard Denues, foreman Electrical Dept.

11—Richard Wolf, Tool Room.

12—Earl Keech, Weld Shop; and Gordon Seitz, C.

14—Clifford Snyder, Tool Room; Richard Trimmer, Plate Shop; and Charles Westrick, B.

16—Loyd Noss, C.

18—Jonathan Owen, road man; and Willis Young, foreman Store Room.

20—Rudolph Crouse, Gun Carriage Procurement; and Richard Rauch, F 3/c.

21—Reda Bortner, Personnel Secretary.

22—Carol Dern, B; Maurice Gardner, Pattern Shop; Albert Gotwalt, Store Room; and Earl Hilker, Project Engineer.

23—John Lytle, Contract Service.

24—Guy Ludwig, road man; and Robert Moody, Yard Gang.

25—R. C. Keller, elevator operator.

26—Leonidas Davis, Traffic; Oliver Dentler, Floor 1; and Paul Warner, Electrical.

27—Earl Lehman, Guard.

28—Charles Rosezweig, B; and Romaine Shaffer, Cost Dept.

29—Pvt. Dane Reid; Earl Smith, C; Thoralf Breda, Design; Daniel Gotwalt, A; and Walter Krebs, Navy.

30—Fred Boyd, Navy.

EDITORIAL STAFF

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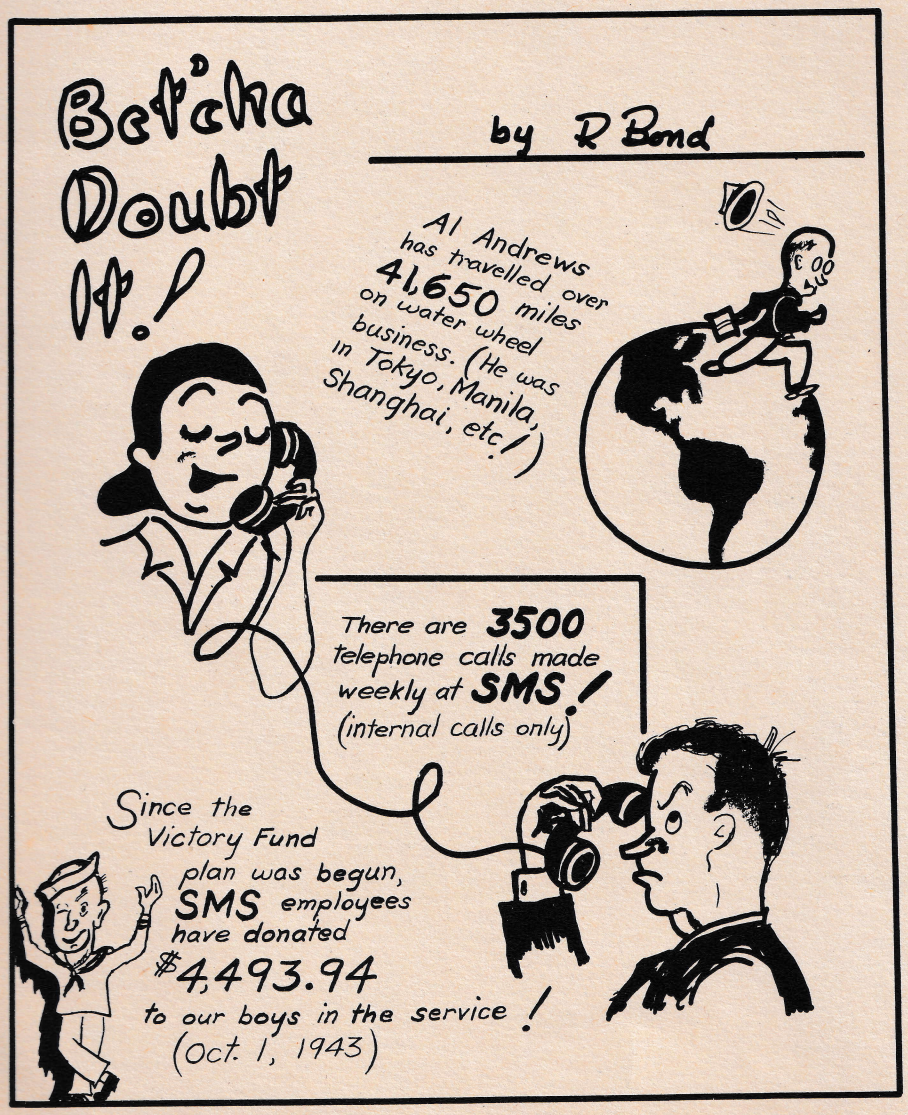
OCTOBER BIRTHDAY GREETINGS

1—G. Dugan Johnson, Engineering.
2—Lt. William Musser, Jr.
3—Howard Myers, C.
4—Quinten Bubb, Design; June Kehoe, C clerk; and Glenn Walk, Weld.
5—Samuel Kormeny, Pattern.
6—Ralph Delisle, A; and Bernice Sechrist, Navy, Main Office.
7—Lester Kern, Navy Assembly; and Maurice Sterner, Plate.
8—Abe Crull, plumber; Marion Long, B inspector, and Beauchamp E. Smith, company president.
10—Pvt. Earl Custer, S/Sgt. Harry Leibenknecht, and Nathan Shelley, C.
12—Arthur Holmes, Floor 3 & 4.
13—Roy Ebersole, leave of absence; and Hilda Knaub, B clerk.
14—William Kling, foreman, assembly coal-crushers.
15—Charles Hendrickson, Weld.
19—Harry Shive, Design; and Kurvin Strayer, General Machine Shop Foreman.
20—W. D. Kettler, Navy Assembly; Mary Jane Myers, Cost; and Robert Rudacille, Contract Service.
21—Elizabeth Constantine, B Time Study.
23—Clyde Chronister, Tool Room; Walter Hollingshead, Estimating; and Donald Thompson, router.
25—William T. Jamison, Cost.
27—Lavere Baker, A; Pvt. Charles Wilt; and Luther Wilt, foreman, Weld.
28—Raymond Baum, A; Pfc. Charles Hoke; and Oscar Weiser, B.
29—Charles Lewis, Weld; and Quinten Wagaman, Floor 1.
30—Catherine Gotwalt, clerk, Project Engineering Office; Harry Heilman, asst. foreman, Floor 1; George Pepo, Floor 1; and Ferd Witmer, foreman, C.

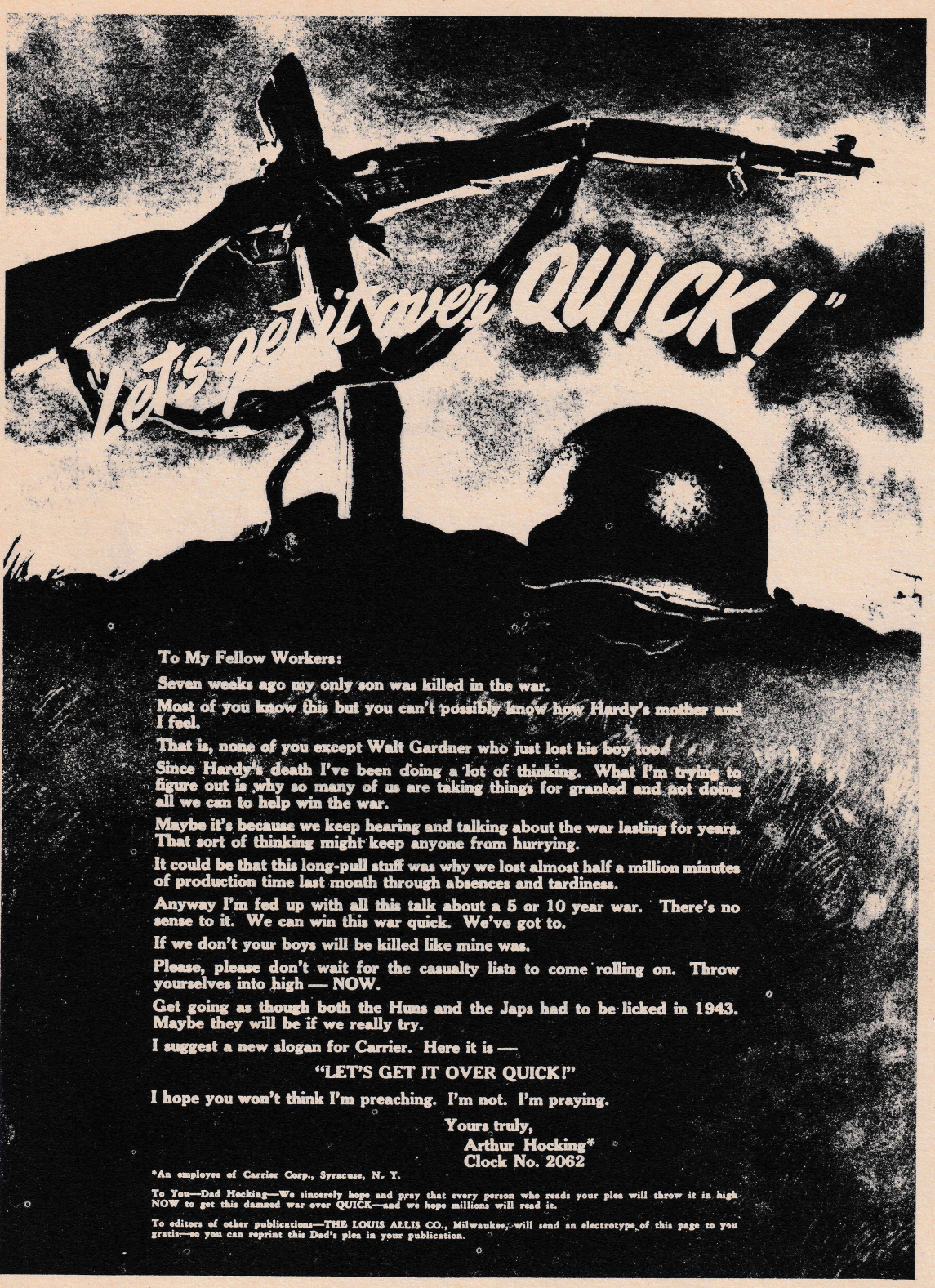
* * *


Betcha Doubt It!
by R Bond
Al Andrews has travelled over 41,650 miles on water wheel business. (He was in Tokyo, Manila, Shanghai, etc.!)
There are 3500 telephone calls made weekly at SMS! (internal calls only)
Since the Victory Fund plan was begun, SMS employees have donated $4,493.94 to our boys in the service! (Oct. 1, 1943)

LOST TIME ACCIDENTS

Dept.	1-1-42 to 10-1-42	1-1-43 to 10-1-43
Pattern Shop	0	1
Plate Steel	1	3
Weld Shop	0	3
Drill Press	2	5
Boring Mill	3	1
Lathe	1	5
Assembly Floor 1	1	4
Assembly Floor 3 & 4	0	0
Navy Assembly	0	1
Tool Room	0	3
Shipping	0	1
Stores, Receiving	0	0
General Factory	1	0
Entire Plant	9	27

We MUST become more safety conscious in order to maintain our production. From Pearl Harbor to September 1, 1943, the casualties to our ARMED FORCES were: killed, 19,581; wounded, missing and prisoners, 83,541. On the HOME FRONT, casualties to civilian workers for the year 1942 alone were: killed, 45,000; injured, 3,960,000. It is therefore evident that it is just as important to train ourselves in accident prevention as it is for our armed forces to be trained in self-preservation.


"Let's get it over QUICK!"
To My Fellow Workers:
Seven weeks ago my only son was killed in the war.
Most of you know this but you can't possibly know how Hardy's mother and I feel.
That is, none of you except Walt Gardner who just lost his boy too.
Since Hardy's death I've been doing a lot of thinking. What I'm trying to figure out is why so many of us are taking things for granted and not doing all we can to help win the war.
Maybe it's because we keep hearing and talking about the war lasting for years. That sort of thinking might keep anyone from hurrying.
It could be that this long-pull stuff was why we lost almost half a million minutes of production time last month through absences and tardiness.
Anyway I'm fed up with all this talk about a 5 or 10 year war. There's no sense to it. We can win this war quick. We've got to.
If we don't your boys will be killed like mine was.
Please, please don't wait for the casualty lists to come rolling on. Throw yourselves into high — NOW.
Get going as though both the Huns and the Japs had to be licked in 1943. Maybe they will be if we really try.
I suggest a new slogan for Carrier. Here it is —
"LET'S GET IT OVER QUICK!"
I hope you won't think I'm preaching. I'm not. I'm praying.
Yours truly,
Arthur Hocking*
Clock No. 2062
*An employee of Carrier Corp., Syracuse, N. Y.
To You—Dad Hocking—We sincerely hope and pray that every person who reads your plea will throw it in high NOW to get this damned war over QUICK—and we hope millions will read it.
To editors of other publications—THE LOUIS ALLIS CO., Milwaukee, will send an electrotype of this page to you gratis—so you can reprint this Dad's plea in your publication.

Quota—Third War Loan Drive	$36,000.00
Bond Sales—Third War Loan Drive	$45,779.00

S. Morgan Smith Company employees have done their bit to "Back the Attack." The continued cooperation of the folks on the home front with the men and women in the Armed Service can only result in ultimate victory. "Let's get it over Quick!"